always use a new disc, copy across the compiler, assembler and library files that will be needed and then use it to save all the various versions of the program as it is developed. Through bitter experience I have learned to save regularly, *SAM C* still has some bugs and it is easy with C to unintentionally write code that locks up so that the computer has to be reset. It is also wise to keep a back up of the source code files on another disc.

If you have Masterdos, it is well worth creating a Ramdisc and copying the library and runtime files needed to it. The time saved by loading files from the Ramdisc can be considerable and it saves a lot of frustration if you are re-compiling frequently when fine tuning some part of the program. But remember to always save source code text to floppy disc.

The game we are going to write is a simple version of the Minefield game. I'm sure everyone knows the game but just in case you don't, here's a very quick explanation. The idea is to clear a minefield marking the positions of all the mines, without hitting one. As each position is cleared, a clue is provided by showing the number of mines present in the surrounding eight positions.

The game will be built up in stages so that at each stage it can be compiled and tested. It is always wise to develop software in this way. Trying to sort out faults in large amounts of untested code is a nightmare. Before we start we need to do a bit of planning and work up a basic strategy.

Game Strategy

We will represent the minefield by a 2 dimensional array (*map [rows][cols]*), so that each position can be accessed by its row and column numbers. We will need a cursor which will be moved around using the cursor keys.

We will need to know the following information about each location of the minefield. Is there a mine here, has it been marked as a mine, how many mines surround it, has it already been checked. That's quite a lot of information to hold in a single cell of an array. We could use more than one array, we could even make them into a structure. But that would over complicate things so this is how we will do it. The number of surrounding mines can be between 0 and 8, we will use 15 to indicate a mine. When the location is checked we will add 16. If the location is marked as a mine we will add 32. (Note checked and marked are mutually exclusive states). Now we can quickly find any information by dividing by 16, using integer arithmetic this will give:-

0 = not checked
1 = already checked
2 = marked as a mine

The remainder after dividing by 16 i.e. `value % 16` (Modulo 16) gives 0 to 15, indicating a mine if 15 or the number of surrounding mines if 0 to 8. We could have used 9 for a mine and then add 10 and 20 but using 16 has a good binary feel to it and leaves some spare numbers which might be needed as the game develops. It's always a good idea to keep some options open.

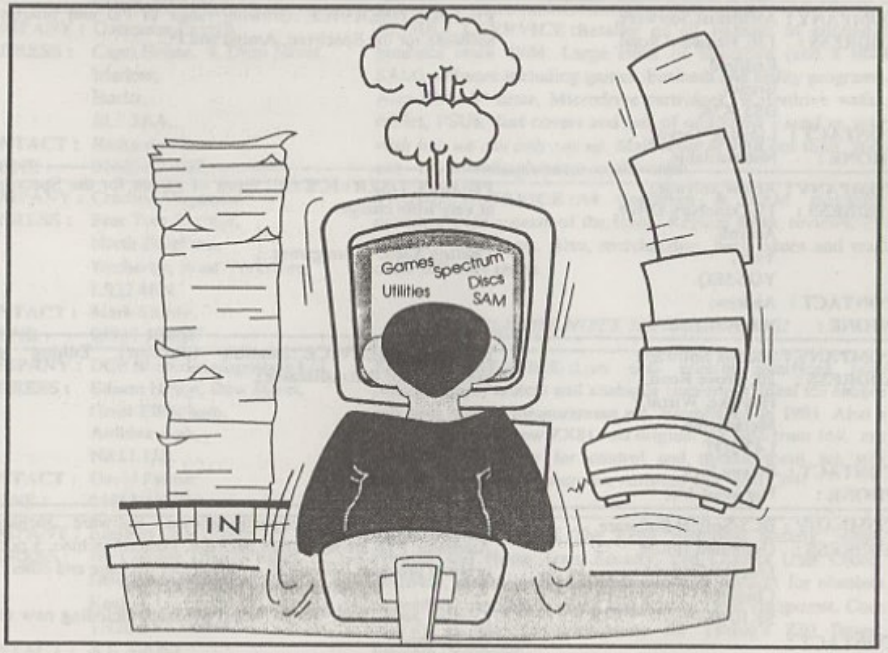
If the number of surrounding mines is calculated for every location at the start of the game, there will be a long delay before each game begins. So the number will be found when a location is checked and entered in the array for subsequent use.

Below is a very high level structure for the game written in a form of

Issue Nº2. October 1997.

FORMAT

SPECTRUM & SAM RESOURCE DIRECTORY



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COMPANY : Ace Software.
ADDRESS : 18, West Street, Geddington, Northants, NN14 1BD.
CONTACT : Alan Cresswell.
PHONE : Not available.

PRODUCT/SERVICE : Spectrum Software - over 2000 titles available on cassette and +3 Disc. All originals. Also books, and magazines.
Coming Soon. Other software available for most 8-bit computers including C64, CPC, Atari ST, and Amiga.

COMPANY : Adventure Probe.
ADDRESS : 52, Burford Road, Liverpool, L16 6AQ.
CONTACT : Barbara Gibb.
PHONE : 0151 280 5616

PRODUCT/SERVICE : Publication of a long running monthly magazine for Adventurers. Also some software available.

COMPANY : The Adventure Workshop.
ADDRESS : 36, Grasmere Road, Royton, Oldham, Lancashire, OL2 6SR.
CONTACT : Philip Reynolds.
PHONE : 0161 652 7565

PRODUCT/SERVICE : Over 100 adventure games for the Spectrum. Available on tape and +3 disc. We sell adventures for both the Spectrum and Amstrad CPC computers and we convert games from one computer to the other.
Coming Soon. We are always on the look-out for games for both machines and will convert and sell games from any author who wishes to contact us.

COMPANY : Alchemist Software,
ADDRESS : 126, Hayward Road, Redfield, Bristol, BS5 9QA.
CONTACT : Lloyd & Trevor
PHONE : Not available.

PRODUCT/SERVICE : Growing range of PD and Shareware software for the Spectrum, Amiga and PC.

COMPANY : Arrow Software.
ADDRESS : 15, Danebury Drive, Acomb, York, YO2 5EQ.
CONTACT : Andrew.
PHONE : Not available.

PRODUCT/SERVICE : All types of games for the Spectrum, at very little charge.

Coming Soon. More games....

COMPANY : Atomik Software.
ADDRESS : 20, Grove Road, Hoylake, Wirral, Merseyside, L47 2DT.
CONTACT : Steven Pick.
PHONE : Not available.

PRODUCT/SERVICE : Samdisk (disczine). Editing and production of Blitz (disczine).

COMPANY : BCS/Softcat Software.
ADDRESS : Grantham House, Macclesfield, Cheshire, SK10 3NP.
CONTACT :
PHONE : 01625 615379

PRODUCT/SERVICE : Spectrum/SAM Software including Animator 1 an art-animation package, Poster Machine, a poster printing program, Video DJ, a video titler package and others.

Coming Soon. New 'video' based products including new video DJ Systems.

COMPANY : Mr C.Box.
ADDRESS : 31, Stanley Street, Semilong, Northampton, NN2 6DD.
CONTACT : Christopher Box.
PHONE : Not available.

PRODUCT/SERVICE : External 720K floppy disc drive for the ZX Spectrum +3.

COMPANY : Chic Computer Club.
ADDRESS : P.O.Box 121, Gerrards Cross, Bucks, SL9 9JP.
CONTACT :
PHONE : 01753 884473

PRODUCT/SERVICE : General computer user group with special interest sections for many machines including the Spectrum. Also Spectrum PD Library, Book Library.

COMPANY : Classix Enterprises.
ADDRESS : 11, Finsbury Drive, Wrose, Bradford, West Yorks, BD2 1QA.
CONTACT : James Waddington .
PHONE : 0336 776390 (pager)

PRODUCT/SERVICE : Classix fanzine, games finder service for Spectrum, C64, CPC and Amiga. Large selection of second hand software available for Spectrum.
e-mail u9600169@bournemouth.ac.uk.

Coming Soon. Classix Web pages. (we need willing contributers for Classix as well).

COMPANY : CLP Computer Supplies.
ADDRESS : Units 7 & 8, Holland Way, Blandford, Dorset, DT11 7TA.
CONTACT : Simon Rigby.
PHONE : 01258 459544

PRODUCT/SERVICE : Mail Order computer supplies. Also do a 'In a Jiff' service for £1.99 which is handy for people who only want one item.

COMPANY : Computer Cavern.
ADDRESS : Capri House, 9, Dean Street, Marlow, Bucks, SL7 3AA.
CONTACT : Richard or Sue.
PHONE : 01628 891022.

PRODUCT/SERVICE : Retailer of all formats of computer products since 1984. Large stock of Spectrum (and a little SAM) software including games, business and utility programs. Also stock 3" discs, Microdrive cartridges, Waferdrive wafas, cables, PSUs, dust covers and lots of odd items - *send us your wish list, we can only say no.* Mail order or visit our shop. Web site - http://wwlu.globanet.co.uk/~capri

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COMPANY : Crashed Magazine.
ADDRESS : Pear Tree Cottage, North Deighton, Wetherby, West Yorkshire, LS22 4EN.
CONTACT : Mark Sturdy.
PHONE : 01937 582837

PRODUCT/SERVICE :A4 Spectrum & SAM magazine covering wide aspects of the scene. Regular news, reviews, PD roundup, interviews. Also, merchandise, back-issues and mail order software range.

PLEASE NOTE NEW ADDRESS!

COMPANY : DCP Microdevelopments Ltd.
ADDRESS : Edison House, Bow Street, Great Ellingham, Attleborough, NR17 1JB.
CONTACT : David Palmer.
PHONE : 01953 457800

PRODUCT/SERVICE : Low cost control interfaces with relays, stepper motors and analogue converters. Ideal for simple robotics, control measurement etc. Established in 1981. Also a number of brand new ZX81 and original ZX Spectrum 16K are available. Interfaces for control and measurement are still available for ZX81, Spectrum, Amstrad CPC and C64!

COMPANY : Einstein User Group.
ADDRESS : Ivy Cottage, Church Road, New Romney, Kent, TN28 8TY.
CONTACT : A.E.Adams.
PHONE : Not available.

PRODUCT/SERVICE : The RPM Historical Society, Steam Printing and Horse Tram Society, Old Copiers User Group. Software, magazines/newsletters and user support for obsolete computers, obsolete printing and reprographic equipment. Core activity is user group/magazine for Tatung's Z80 Based, Einstein Computer.

COMPANY : Express Software.
ADDRESS : 7, Manor Drive, Merriott, Somerset, TA16 5NT.
CONTACT : Richard Coles
PHONE : Not available.

PRODUCT/SERVICE : Graffixmas clipart pack for 48/128 Spectrum. Available on tape or PLUS D disc.

COMPANY : Fairweather and Beeton.
ADDRESS : 46, High Road West, Felixstowe, Suffolk, IP11 9JE.
CONTACT : Alf Fairweather.
PHONE : 01394 273178

PRODUCT/SERVICE :'The Thing Monthly' fanzine incorporating 'Your Thinclair', information about emulators, the net and it's free.
Coming Soon. A special fifth anniversary issue.

CONTACT : Flexibase Services.
ADDRESS : 20, The Parklands, Droitwich Spa, Worcs, WR9 7DG.
CONTACT : David Wornham.
PHONE : Not available.

PRODUCT/SERVICE : Software for safety - interactive and multi-choice quizzes on crime prevention, personal safety and road safety.Versions available for Spectrum PLUS D, +3, SAM, and the PC.

COMPANY : Format Publications.
ADDRESS : 34, Bourton Road, Gloucester, GL4 0LE.
CONTACT : Jenny Bundock.
PHONE : 01452 412572

PRODUCT/SERVICE : Well, we had to include ourselves didn't we. Still, just for the record, here is what we do. Monthly magazine, everything for the Spectrum, SAM and (when we can) other Z80 computers. Wide range of software, hardware and technical support for the Spectrum and SAM. Fast efficient SAM repair service. Organizers of the twice yearly Gloucester shows. Publishers of this directory. Nice people too...

COMPANY : Fountain PD.
ADDRESS : 11, Camel Road, Silvertown, London, E16 2DE.
CONTACT : Dave Fountain.
PHONE : 0171 4765915

PRODUCT/SERVICE : Importer and retail distributor of PD Software to UK PD Libraries and other services. Ex-commercial games distributor.

Coming Soon. News agency service.

COMPANY : Fred Publishing.
ADDRESS : 5, Ivanhoe Drive, Ashby De La Zouch, Leicestershire, LE65 2LT.
CONTACT : Darren Wileman.
PHONE : 01530 416207

PRODUCT/SERVICE :'Fred' - A monthly SAM disc magazine. Superb range of SAM software including licenced conversions like Lemmings etc. Also stock a wide range of SAM software from a variety of publishers.

Coming Soon. More new games for SAM. See us at the Gloucester shows.

CONTACT : Galaxy Software.
ADDRESS : 43, Gwydir Street, Toxteth, Liverpool, L8 3TJ.
CONTACT : Leon Brown.
PHONE : 0151 728 9084

PRODUCT/SERVICE : Spectrum software, also Hammer PD library and Eight Bit Alliance user group.

COMPANY : Grafix Wizards.
ADDRESS : 5, Helmsley Drive, Eastwood, Notts, NG16 3RS.
CONTACT : Jonathan Cauldwell.
PHONE : Not available.

PRODUCT/SERVICE : Spectrum arcade games, turbo basic compiler and other utilities.

Coming Soon. Death Trap 3 - a 1 or 2 player split screen arcade game.

COMPANY : W.Hall & Sons.
ADDRESS : 147, Gladstone Street, Winsford, Cheshire, CW7 4AU.
CONTACT : Bill Hall.
PHONE : 01606 551925

PRODUCT/SERVICE : Software package to convert Spectrum into a Video titling character generator. Established in 1985 this package was the first video titling software for any home computer.

COMPANY : Hilton Computer Services Ltd.,
ADDRESS : 143, Kingfisher Drive, Guildford, Surrey, GU4 7EY.
CONTACT : Jack Gibbons.
PHONE : 01483 826375

PRODUCT/SERVICE : Personal Banking System for ZX81, Spectrum (tape, microdrive or disc), CPC, BBC, QL, PC, SAM. Also PBS Budget Module, Personal Filing System for SAM.
Coming Soon. Data Entry Toolkit for SAM, useful entry, validation, display routines + read/write records using keyed serial/random access files (incl. hard disc). Also Hilton's Casino, gambling games collection. Do you feel lucky!

COMPANY : Holdfast Computing.
ADDRESS : Park View, Queenhill, Upton-on-Severn, Worcs, WR8 0RE.
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PRODUCT/SERVICE : Early learning Joypad, also used for special needs. Joy-stick compatible. We can also supply a range of SAM cables to order, and (if you can afford it!) provide professional technical documentation services.

COMPANY : HS Computers.
ADDRESS : Unit 2 The Orchard, Warton, Preston, Lancs, PR4 1BE.
CONTACT : Bill Harrison.
PHONE : 01772 632686

PRODUCT/SERVICE : Computer Repairs (All Spectrum range).

COMPANY : IEBA.
ADDRESS : c/o Harrowden, 39, High Street, Sutton, Ely, Cambs, CB6 2RA.
CONTACT : Brian Watson.
PHONE : 01353 777006

PRODUCT/SERVICE : The IEBA (the Independent Eight Bit Association) is a cross-format association devoted to the promotion of the benefits of 8 Bit computing. It is non profit making, and run by a committee or representatives from the principal 8 Bit computers.
Coming Soon. National 'contact' campaign to find the 8-bit users who do not know what support is still available to them.

COMPANY : J & P Electronics Ltd.,
ADDRESS : Unit 45 Meadowmill Estate, Dixon St, Kidderminster, DY10 1HH.
CONTACT : J.E.Price.
PHONE : 01562 753893

PRODUCT/SERVICE : Computer, Monitor, Printer Repairs. Some amateur Radio Software for Spectrum.

COMPANY : Kobrahsoft Software.
ADDRESS : Pleasant View, Hulme Lake, Hulme, Longton, Stoke-on-Trent, ST3 5BH.
CONTACT : Mr Cope.
PHONE : 01782 305244

PRODUCT/SERVICE : We sell a wide range of Spectrum and SAM Software and utility programs.

COMPANY : MDL Software.
ADDRESS : Holmrigg, Wester Essendy, Blairgowrie, Perthshire, PH10 6RD.
CONTACT : Douglas Young.
PHONE : 01250 884309

PRODUCT/SERVICE : Disc Magazines Sam2Sam and Daft Games: X-Sights 1 and 2, Addiction. Compilation discs and Several (10+) Volumes of Screens discs (over 100 products).

COMPANY : Micro Spec Software.
ADDRESS : 22, Bond Street, Innerleithen, Peeblesshire, EH44 6HW.
CONTACT : Jamie Smith.
PHONE : 01896 830560

PRODUCT/SERVICE : Both games and educational software on 3"disc and tape. My software isn't PD but very low cost.

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COMPANY : Mungus Software. **ADDRESS :** Moorview, Leigh Road, Chulmleigh, North Devon, EX18 7BL. **CONTACT :** Stephen McGreal. **PHONE :** Not available.	**PRODUCT/SERVICE :**Games with Quazar surround support. Current games available are Blokker, Puzzle Game with Quazar support. Impostors, Lemmings style puzzle/platform game with Quazar support.
COMPANY : Outlet Computer Club. **ADDRESS :** 34, Saltersgate Drive, Birstall, Leicester, LE4 3FF. **CONTACT :** Ron Cavers. **PHONE :** Not available.	**PRODUCT/SERVICE :**A monthly disc magazine for hobbyists - containing programs/articles/letters/demos/hints & tips/short routines etc., The disc is available for DISCiPLE, PLUS D, +3 and PC. Published monthly since September 1987. emil ron-cavers@virgin.net
COMPANY : Quazar. **ADDRESS :** 204, Lamond Drive, St. Andrews, Fife, Scotland, KY16 8RR. **CONTACT :** Colin Piggot. **PHONE :** Not available.	**PRODUCT/SERVICE :**Hardware and software for the SAM including the Quazar Surround Soundcard - 16 Bit surround sound! Plus the latest software release: 'Stratosphere' - a stunning 3d wireframe game. *Coming Soon.* More software (especially games).
COMPANY : Revelation Software. **ADDRESS :** 45, Buddle Lane, Exeter, EX4 1JS. **CONTACT :** Frank Broughton. **PHONE :** Not available.	**PRODUCT/SERVICE :**One of the largest range of both games and serious software for the SAM. *Coming Soon.* We are urgently looking for good programmers - both machine code and Basic. If you have the talent - we have some good ideas.
CONTACT : Retro Classix, **ADDRESS :** 4, Chatterton Avenue, Ermine West, Lincoln, LN1 3TB. **CONTACT :** Graham Howden. **PHONE :** 0171 7336576	**PRODUCT/SERVICE :**Fully illustrated monthly magazine covering Spectrum and all formats of early classic micros, plus a regularly updated catalogue with 1000's of items for sale.
COMPANY : SAM PD. **ADDRESS :** 18, Mill Lane, Skelmersdale, Lancashire, WN8 8RH. **CONTACT :** Derek Morgan. **PHONE :** 01695 731163.	**PRODUCT/SERVICE :**The largest range of SAM PD software there is. Quick and reliable service with the very latest items available. Also F9 Software - non-PD software. See us at the Gloucester shows.
COMPANY : Saturn Software. **ADDRESS :** 5, Ivanhoe Drive, Ashby De La Zouch, Leicestershire, LE65 2LT. **CONTACT :** Darren Wileman. **PHONE :** 01530 416207.	**PRODUCT/SERVICE :**Network Sigma - bi-monthly disc magazine for SAM. Easy Disc - File Utility, Driver Icons I + II. Also software publishing, currently publishing MDL Softwares titles. - See FRED entry for details of FRED disczine.

COMPANY : SD Microsystems. **ADDRESS :** PO Box 24, Attleborough, Norfolk, NR17 1HL. **CONTACT :** Steve. **PHONE :** 01953 483750.	**PRODUCT/SERVICE :**Software and supplies for Amstrad CPC's, PCWs and Dos PC's including the 1512/1640 range. Cheap Spectrum manuals, 3" discs, ribbons etc.,
COMPANY : SD Software. **ADDRESS :** 70, Rainhall Road, Barnoldswick, Lancashire, BB8 6AB. **CONTACT :** Nev Young. **PHONE :** Not available.	**PRODUCT/SERVICE :**SAM IDE hard disc interface. SAM software including Specmaker and PC Suite. Spectrum software for DISCiPLE and PLUS D.
COMPANY : Sintech GBR. **ADDRESS :** Gastackerstr. 23, 70794 Filderstadt, GERMANY. **CONTACT :** Thomas Eberle. **PHONE :** 0049 711 775033	**PRODUCT/SERVICE :**Spectrum software from Ocean, US Gold and Codemasters, also new software from Eastern Europe. Many games and some very good new utilities like PROMETHUS (assembler), SQ-TRACKER (AY-Sound-tracker), Also sell all kinds of used hardware. *Coming Soon.* OCTOPUSSY (James Bond Action Adventure), MB-Soundface (8-Bit DA-Interface for playing music samples.
COMPANY : SPC (Spectrum and SAM Profi Club). **ADDRESS :** Wolfgang and Monika Haller, Im Tannenforst 10, D-51069 Koln, GERMANY. **CONTACT :** Wolfgang and Monika Haller. **PHONE :** 0049 221 685946	**PRODUCT/SERVICE :**Monthly paper mag with 16 pages A5 for Spectrum and SAM. Very large PD service for Spectrum. Club repair service for Spectrum and Spectrum hardware. Help on request, ie for using PD programs written in German.
COMPANY : Steves Software. **ADDRESS :** 7, Narrow Close, Histon, Cambridge, CB4 4XX. **CONTACT :** Steve Nutting. **PHONE :** 01223 235150	**PRODUCT/SERVICE :**Specialists in Desk Top Publishing software for the SAM. Also clipart collections, photo scanning, and printer software.
COMPANY : Sword Software. **ADDRESS :** 19, Great Leaze, Cadbury Heath, Bristol, BS15 5AT. **CONTACT :** Gary Pearman. **PHONE :** 0117 9832522	**PRODUCT/SERVICE :**Adventure games for all Spectrums, Public Domain for the Amiga. Can supply spare +2/+3 keyborads/keys and many other spares such as IC's (Z80A, 4116's, etc.)
COMPANY : Tasman Software. **ADDRESS :** Hilton Court, 2, North Hill Road, Leeds, LS6 2EN. **CONTACT :** Robin Thomson. **PHONE :** 0113 243 8301	**PRODUCT/SERVICE :**Tasword Two (48k), Tasword +2 and Tasword +3 word processing programs for the appropriate .
COMPANY : TIS. **ADDRESS :** 76, Church Street, Larkhall, ML9 1HE. **CONTACT :** Craig. **PHONE :** 01698 883334	**PRODUCT/SERVICE :**Service Manuals and Info (including all versions of Spectrum).

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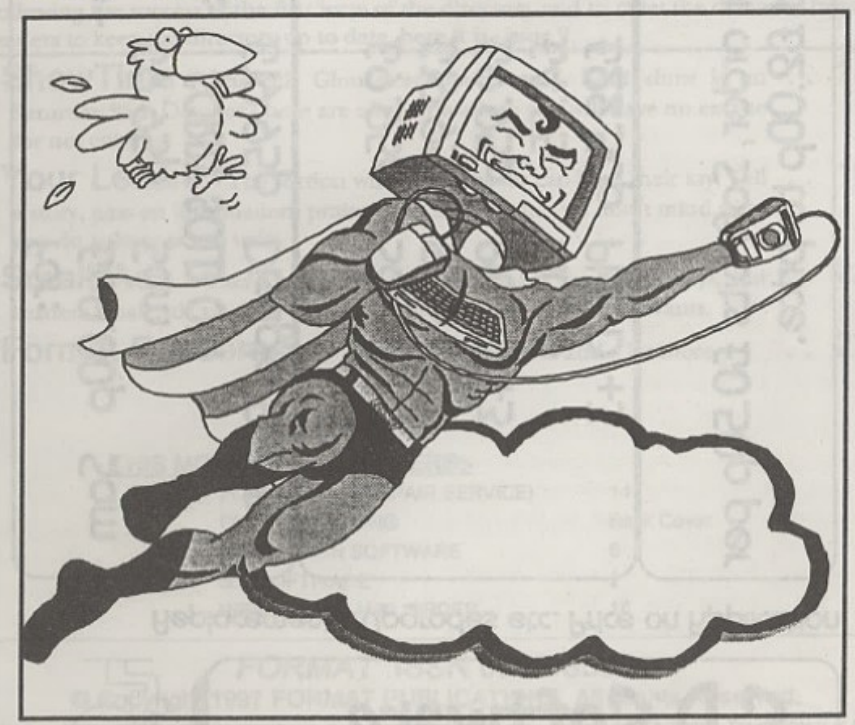

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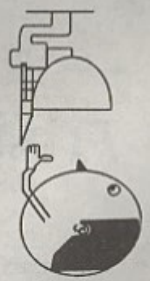

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NEWS ON 4

RICHEST MAN IN WORLD - AND ITS ALL DOWN TO COMPUTERS

The computer industry may still be very young as industries go, but it has just acquired a new distinction, that of creating the richest man in the world.

Yes, Bill Gates, founder and boss of Microsoft in the USA, has now officially earned the status of the richest man in the world - beating the former title holder, the Sultan of Brunei, by a cool £1billion, with a personal fortune set at £26billion.

Gates, at only 41 years old, had topped Forbes magazine's '400 richest Americans' list for the last four years, the famous Donald Trump being a mere pauper by comparison with a nett wealth of only £850million getting him to 115th place on the list.

Just goes to show you what a little bit of programming can do for you if you get to be in the right place at the right time.

WETHERBY DOWN, BUT NOT OUT

Early reports show attendance was down at the Wetherby show near Leeds in September - mostly due to the short notice given for the event.

However, fear not, there are already plans for another one in 1998 and this time the organizers are promising more notice. Although we have not been given the date yet, rumour has it that it will be in February. We will let you know the exact date as soon as we have it.

A QUART INTO A PINT POT

The old adage is that you cannot get a quart into a pint pot, but you try telling that to Quazar.

They have come up with a way of compressing 16bit sound samples using a modified ADPCM (Adaptive Differential Pulse Code Modulation) technique similar to that used on PCs, to achieve an 8 to 1 compression. This allows 3 minutes of 16bit sound to be played on SAM with a sampling rate of 11hHz with real-time decompression during play-back. Without compression there is room for only 22 seconds of sample in memory.

For more details contact Colin Piggot at Quazar or come along to the Gloucester show on the 25th October and see (hear?) for yourself.

FASTER INTERNET

Norweb, one of Britain's biggest electricity companies, has announced its intentions to move into the Internet Service Provider (ISP) field. It plans to use new technology it has developed that uses the electrical distribution system to carry the modem signals at up to 30 times the rate that the current telephone system can cope with.

Until now 'noise' on the system was a major problem but Norweb have now found a way round this.

Norweb say that the new technology will also allow them to provide local telephone calls for a simple one-off monthly payment.

YOUR NEWS HERE...

Come on readers, we need your news. Anything related to computers which you think will interest other SAM and Spectrum owners. Just jot it down on a piece of paper, add your name and membership number, and send it off to us at the usual address. Please mark the envelope 'News' so that we can give it the priority it deserves.

Remember, you get three months extra subscription for every news item we print, so don't rely on others to send in an item you have seen - send it off yourself and earn our thanks as well.

The Editor Speaks

October already and this issue has to be at the printer chappies yesterday so they can get it printed and trimmed and back to us so that we can get it packed and sealed and addressed labelled and sent out to you all in time so that you can all get it before the Gloucester show on the 25th October 1997 so that you will not have any excuse for missing the show will you....

Phew! Got that out. As you can see, I've got to work quick this month - still it does help us to catch up a little. I do promise we will get back to posting ***FORMAT*** out early in the month - *soon*.

Right then, the Gloucester show is the big thing this month, hope lots of you will be able to make it. The shows are a chance to meet people as well as the ideal place to see all the software and hardware for your favourite machine. It's hard to believe, but this is the ninth show we have held and I'm sure it will turn out to be the best.

This month also sees the second edition of our Spectrum & SAM Resource Directory. We held it over from last month because: we did not have room for it, we had to chase some entries that had not been returned on time, and because we thought October (with the show) would be a better month for it anyway. The first issue, last year, was very well received and we hope you will find the updated version even more useful.

Speaking of last month, both Jenny and I would like to thank all of you who took the time to ring up to congratulate us on ***FORMAT***'s tenth birthday. Your telephone calls, and the many letters we received, were very heart-warming, it is nice to know so many of you enjoyed the special birthday issue. On the subject of letters, I would be very interested in hearing from readers about how they first came to hear about ***FORMAT*** and subscribe to INDUG, about what you like in ***FORMAT*** and what you don't.

Of course, as I should have expected, Jenny's bit last month caused the most titters. Considering I dropped it on her with no notice whatsoever, and told her she had just one hour to fill a page - I was very pleased with the result (ok, she took nearer two hours, but it was worth it). I promised not to censor her efforts (I know, I'm a fool) but she was kind and did not insult me too much.

Roy Burford, a regular contributor to SHORT SPOT had an interesting letter published in the Telegraph's Connect weekly computing supplement on Tuesday 7th October. He was defending the ZX81 (and others) from claims that it was "utmost lunacy" to own such machines. Well done Roy, you told 'um.

And to finish off. Congratulations to Jon Nixon, the artist who does most of our front covers, who has just moved to Amsterdam for his new job. He will still be doing the covers for us although I'm not sure as I write this if he will get one to me in time for this issue, if not, normal service will resume next month.

Until next month.

Bob Brenchley, Editor.

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SHORT • SPOT

YOUR HINTS, TIPS AND PROGRAMMING IDEAS

Edited By:- John Wase.

It's October, and once again, time for Short Spot. It's difficult, this month, as I'm running short of material again, although as luck would have it Bob only wants four pages this month. But please, be good to me, ***send me some stuff NOW.*** **PERLEAZE!**

The first item is from Peter Williamson of Sleaford, of 'Diary' fame - you remember all the hoo-hah over KEYIN, don't you. Anyway, here, just to stir things up quite a bit more, is a new program for SAM, again submitted by Peter, and again using the KEYIN command. This particular program is a gem for programmers, because the idea is to check an existing program to see what variable letters have been used. This is particularly useful if you want to add a subroutine to an existing program.

Peter usually names his variables with single letters - A, B or C and so on. This snippet checks whether variables A to Z have been used. It checks numeric variables, then numeric arrays, followed by strings and finally string arrays.

Normally, if one types in **PRINT A**, or **PRINT A$** and the variables have not been declared, then an appropriate error message appears on the screen, and one can use this action to check out any variable name. This program effectively does this for the whole alphabet of variable names, using the ON ERROR GOTO command.

In use, the program, called 'checker' is merged with the program under review. The line numbers of 20000 upwards should ensure that merging programs do not overwrite any lines. **RENUM LINE xxxxx** can, however, be used to set the program to any sequence of line numbers. In this case, line 20200 does not correctly re-adjust to the RENUM command, and the KEYIN line number in inverted commas must be set to the line number after the ON ERROR command.

Line 20010 sets up the screen for MODE 3 operation, but this is only for Peter's own use. The line can be left out and the program will adapt to whatever mode the program merged to uses.

One interesting point came out in Peter's tests with the program. As you know, a variable named, say, A can co-exist with a program with an array also named A, but a string A$ cannot do so with a string array of the same name. This shows up on the program when a string, say A$, is present. It will print out in the string section (sounds like an orchestra), but will also show up in the string array section.

Now here's 'checker'. It's good: get typing!

```
20000 REM VARIABLES IN USE
        "CHECKER PROGRAM"
20010 MODE 3: CSIZE 8,10: BORDER
      1: PAPER 1: PEN 15: CLS
20020 LET TENANTS="ABCDEFGHIJKLM
      NOPQRSTUVWXYZ"
20030 PRINT "VARIABLES IN USE CH
      ECKOUT"
20050 FOR XYZ=1 TO 4
20060 IF XYZ=1 THEN PRINT "NUMER
      IC VARIABLES": PRINT
20070 IF XYZ=2 THEN PRINT "NUMER
      IC ARRAY VARIABLES": PRINT
20080 IF XYZ=3 THEN PRINT "STRIN
      G VARIABLES": PRINT
20090 IF XYZ=4 THEN PRINT "STRIN
      G ARRAY VARIABLES": PRINT
```

```
21000 FOR XXX=1 TO 26
20110 IF XYZ=1 THEN LET HOST$ ="
      PRINT INVERSE1;0;"
20120 IF XYZ=2 THEN LET HOST$ ="
      PRINT INVERSE1;0(1);"
20130 IF XYZ=3 THEN LET HOST$ ="
      PRINT INVERSE1;0$;"
20140 IF XYZ=4 THEN LET HOST$ ="
      PRINT INVERSE1;0$(1);"
20150 LET HOST$(16)=TENANT$ (XXX
      )
20160 IF XYZ=1 THEN PRINT "NUMER
      IC VARIABLE ";HOST$(16);
20170 IF XYZ=2 THEN PRINT "NUMER
      IC ARRAY"; HOST$(16 TO 17)
      + HOST$(19);
20180 IF XYZ=3 THEN PRINT "STRIN
      G VARIABLE "; HOST$(16 TO
      17);
20190 IF XYZ=4 THEN PRINT "STRIN
      G ARRAY "; HOST$(16 TO 18)
      +HOST$(20);
20220 KEYIN "20220"+HOST$
20210 ON ERROR GOTO 20290
20220 PRINT INVERSE 1;Z$(1);
20240 PRINT "  "; PEN 2; INVERSE
       1; "  IN USE  "
20250 NEXT XXX
20260 PAUSE 0: CLS: NEXT XYZ
20270 STOP
20290 PRINT "  "; INVERSE 1; "
       NOT IN USE  "
20300 GOTO 20250
```

You know, life can be very trying - and very serious. In this day and age, when our every second is counted at work, one longs for something to break the monotony. I could do with some real sillies; preferably with some idea as to how they work.

One very simple one is to type something silly on your Spectrum. Like:-

```
10 FOR A=1 TO 9E9
20 PRINT "JOHN WASE IS WONDERF
   UL": PRINT: PRINT
30 POKE 23692,255
40 NEXT A
```

And it will carry on printing for ever. The answer, as almost all of us know, is that it does not stop when the screen is full: indeed, since we have POKEd the system variable 'SCR CT' with 255 instead of the default 1, you will get 255 screens or thereabouts. Or would, were the whole thing not in a loop. Because of this it goes round and round, continually POKEing the system variable with 255, so it will carry on printing to the screen until you press the 'Break' keys. All right; then let's for instance, have a routine that is very short and *won't* let the break keys work. This sort of thing should give you all sorts of silly ideas, shouldn't it. C'mon; let's have some!!! Let's break the monotony! Don't let them get you down! Send some for next month!

Next, I have a little snippet from Ettrick Thomson of Grundisburgh, Woodbridge, Suffolk, who wrote quite a while ago, but his letter got caught up in all that honeymooning stuff, and so has been a little late in being printed. Better to have kept it back, however, for, as I mentioned, I've next to nothing this month and nothing at all for next!

Ettrick writes that he once thought he had managed to work out how to use VAL$ in SAM, but was wrong! He is therefore very grateful to Geoff Bridges in his version of 'Diary' for showing how it can be used. He is wrong, however, in saying that VAL$ does not work in a LET statement, but you must remember that a LET statement must be of the form:-

```
LET  <name of variable>  =  <an
expression whose value is to be
assigned to the variable>.
```

So you could have:-

```
LET a$+ VAL$("d"+STRING$(3-LEN
     STR$ dn,"0");
```

but this doesn't help in the 'Diary' program. Line 460 uses STRING$(3-LEN STR$ x,"0")+STR$ x to get STR$ x as 3 digits with leading zeros if necessary; here is a trick that is neater: use (STR$(x+1000))(2 TO).

Many thanks, Ettrick, and I hope that I now have your address right!

Dean Shepherd of Bristol, a contributor, I think, new to us (bless you, Dean, for saving the day) has written to mention that he encloses a disc containing some items which, he says, might (just) be of interest to me! Not half! Just listen to this! Dean writes that he has tried to include those which he thinks might be of general interest to ***FORMAT*** readers, but his own interests during the last decade have tended towards typing in and saving lots of Basic and machine code programs from the huge number of magazines which he collected between 1986 and 1993. He does not have them all (I should think not), but to anyone seriously into Spectrum and SAM from a novice point of view, Dean is certain they would regard his collection as treasure trove. And so do I, Dean, for this is just the sort of thing that readers find so useful.

The first program Dean's sent me is called 'labeller', and will print out a small label for you to stick on your 3½" or 5¼" discs. ('Ere we go, folks - this is where I get inundated with letters from folk who don't completely understand the control codes on the printer Dean is using, and can't work out the control codes on the one they have, either)! It caters for a maximum of 80 files; it was written in 1987, and is limited more by physical space than anything else) but at least it works.

Regrettably, Dean has not been able to use it since he changed from GDOS to Uni-DOS in 1990, but this program worked well then, and he cannot think of any reason why it should not work now for GDOSsers, as it were. Unfortunately, Dean writes, he has no talent for programming, and has therefore been unable to convert this to Uni-DOS operation, although he has tried. He has ideas for a SAM version, too, but he stumbles because he does not understand the machine code section. Hugh McLenaghen, who was the person behind the 'Hack Zone' some years ago in ***FORMAT***, gave Dean this program, and his name is in the REM at the beginning. Just in case anyone is interested, Dean mentioned that Hugh got his PhD in computing, and the last Dean heard was that he had gone to live in the United States. Here, then, is 'Labeller':-

```
 10 BORDER 0: PAPER 4: CLS
 20 PRINT AT 10,8; FLASH 1;" LA
    BEL MASTER "; FLASH 0
 30 INPUT "drive number : ";i
 40 IF i<0 OR i>2 THEN LET i=1
 50 CLS : CAT i!
 60 INPUT "Label this disc?  Y/
    N ";i$
 70 IF i$="n" OR i$="N" THEN CL
    S : GOTO 30
 80 IF PEEK 65000<>22 THEN GOSU
    B 820
 90 RANDOMIZE USR 65000: REM  d
    ir at 40000
100 LET a$="DISCIPLE/H.McLENAGH
    AN - LABELMASTER  - ©1989"
110 LET b$="------------------
    ------------------------
    "
120 LET c$="----------------"
130 REM initialize printer
140 CLS : PRINT AT 10,6;"PUT PR
    INTER "; FLASH 1;"ON-LINE";
     FLASH 0
160 POKE @6,1
170 LPRINT CHR$ 15: REM condens
    ed
180 LPRINT CHR$ 27;CHR$ 83;CHR$
     1: REM subscript
190 LPRINT CHR$ 27;CHR$ 51;CHR$
     16: REM 16/216 linefeed
200 POKE @6,0: CLS
210 LET adres=40000: DIM n$(80,
    16): LET tel=0
220 FOR p=1 TO 80
230 LET a=PEEK adres: IF a=0 TH
    EN GOTO 360
240 LET t$=("B" AND a=1)+("N" A
    ND a=2)+("L" AND a=3)+("C"
    AND a=4)+("s" AND a=5)+("M"
     AND a=6)+("$" AND a=7)+("X
    " AND a=8)+("S" AND a=9)+("
    O" AND a=10)+("E" AND a=11)
250 LET p$=STR$ p
260 LET n$(p,1 TO LEN p$)=p$: L
    ET n$(p,14)=t$: LET n$(p,3)
    =". "
270 FOR f=1 TO 10
```

```
280 LET i$=CHR$ PEEK (adres+f):
    LET i=CODE i$
290 LET j$=("~" AND i$="#")+("~
    " AND i$="#")+("~" AND i$="
    •")+("~" AND i>127)
300 IF j$="" THEN LET j$=i$: LE
    T j=CODE j$
310 IF j>90 THEN LET j$=CHR$ (j
    -32)
320 LET n$(p,3+f)=j$
330 NEXT f
340 PRINT AT 10,7;n$(p): LET te
    l=tel+1
350 LET adres=adres+256
360 NEXT p
370 DIM m$(tel,16)
380 LET a=1
390 FOR f=1 TO 80
400 IF n$(f,1 TO 2)<>"  " THEN
    LET m$(a)=n$(f): PRINT AT 1
    2,7;a: LET a=a+1
410 NEXT f
420 INPUT "Sort  ?  Y/N ";i$
430 IF i$="y" OR i$="Y" THEN GO
    SUB 650: GOTO 440
440 INPUT "3.5''  of  5.25'' la
    bel  ";i$
450 IF i$="3" THEN LET x=3: GOT
    O 470
460 IF i$="5" THEN LET x=4: GOT
    O 470
470 REM  etiket
480 POKE @5,255: LET a=1
490 IF x=3 THEN LPRINT a$: LPRI
    NT b$
500 IF x=4 THEN LPRINT a$(1 TO
    37);c$;a$(38 TO ): LPRINT b
    $+c$
510 FOR p=1 TO x
520 LPRINT m$(a);: LET a=a+1: I
    F a=tel+1 THEN GOTO 560
530 NEXT p
540 LPRINT
550 GOTO 510
560 IF x=3 THEN LPRINT : LPRINT
     b$
570 IF x=4 THEN LPRINT : LPRINT
     b$+c$
580 POKE @6,1
590 LPRINT CHR$ 27;CHR$ 84
600 LPRINT CHR$ 18
610 LPRINT CHR$ 27;CHR$ 65;CHR$
     12
620 POKE @6,0
630 FOR f=1 TO 5: LPRINT : NEXT
     f
640 GOTO 10
650 CLS : PRINT ; INVERSE 1;"SO
    RT....on ; "; INVERSE 0
660 PRINT ''"1 = filename"
670 PRINT '"2 = filetype"
680 PAUSE 0
690 IF INKEY$="1" THEN LET i=4:
     LET j=13: GOTO 720
700 IF INKEY$="2" THEN LET i=14
    : LET j=14: GOTO 720
710 GOTO 680
720 PRINT '' TAB 4;tel; TAB 7;"
     files on this disc."
730 FOR a=1 TO tel
740 FOR b=a TO tel
750 IF m$(a,i TO j)>m$(b,i TO j
    ) THEN LET q$=m$(a): LET m$
    (a)=m$(b): LET m$(b)=q$
760 NEXT b
770 PRINT AT 10,4;a; TAB 7;" fi
    les sorted."
780 NEXT a
790 BEEP 1,10
800 RETURN
810 STOP
820 FOR f=65000 TO 65066: READ
    g: POKE f,g: NEXT f
830 DATA 22,0,33,64,156,30,1,21
    3,229,205,29,254,207,63,225
    ,209,218,16,254,36,36,28,12
    3,254
840 DATA 11,56,236,20,122,254,4
    ,56,228,33,214,27,205,29,25
    4,201,50,28,254,33,214,27,2
    05
850 DATA 29,254,219,187,231,0,1
    ,195,26,183,237,66,219,187,
    34,210,26,211,187,201
860 RETURN
870 STOP
9999 CLEAR : SAVE d*"LABELLER" L
    INE 10
```

Oh, and if anyone manages to convert this to a Uni-DOS version, and/or a SAM version, please let Dean know. And we would love to have some more from you Dean. Many thanks.

Please keep all your snippets coming to me; without them I can't put a column together. Please send them to:-

John Wase,
Green Leys Cottage,
Bishampton,
Pershore,
Worcs,
WR10 2LX.

See you next month.

MINEFIELD

A step by step guide to writing a C program using SAM C.

Part 1.

By:- John Eyre

To really understand how to program in C, you'll need a good tutorial or reference book. They are usually pretty thick, cost an arm and a leg and are unlikely to make good bedtime reading. Fortunately it's possible to produce quite useful software knowing only the basics of the C programming language.

This series of articles is not intended as a tutorial on the C Language or on how to program, it is a step by step guide to the development of an example game using *SAM C*. It's written around the standard version of *SAM C*, not *SAM Vision*. I won't start from absolute scratch but will assume that you already know a little about C, from reading the *SAM C* manual, and are familiar with programming using something like SAM Basic.

Before starting on the game, just a few points on some common problems experienced with C that are worth a mention. C somehow manages to combine most of the advantages of a high level language with the flexibility and direct access of machine code. At first C may appear very confusing but you can get a long way knowing just a few simple rules. Most of the control structures and there are not many, follow the form:-

```
Keyword (condition(s))
 {
  executable statement;
            :
            :
  executable statement;
 }
```

The curly braces '{' and '}' are used to identify the start and end of the block of statements to which the keyword applies. If there is only one executable statement then all that's needed is:-

```
Keyword (condition(s))
  executable statement;
```

The ';' is used to separate executable statements but not the Keyword from it's associated statement(s).

I mention this because the most common error when first learning C is forgetting to put ';' at the end of a line or using it when it's not required. Another common mistake is not matching up opening and closing curly braces. A single omission can cause a large number of error reports from the compiler which then inserts error messages in the source code. If you forgot to save before compiling, the messages will have to be individually deleted so it is worth the effort to check before compiling.

One way of making it easier to check the source code text and identify problems is by using a clear layout with a consistent identing policy. The system I've adopted and will use throughout this article is a single character space indent, with opening and closing curly braces on a separate line and each statement given its own line. It looks long winded but it pays dividends in the end.

Finally beware of '=' meaning assigns and '==' which means equal to.

When starting a new program, I

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ADDRESS :	%, Format Publications, 34, Bourton Road, Gloucester, GL4 0LE.	
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CONTACT :	John.	
PHONE :	Not available.	
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In constructing this directory we sent out entry forms to many companies whose addresses we had gathered over the last few years. However, quite a few did not return their forms and, although we believe many of them are still in business, we are unable to include them in this directory. Of course, we have tried our best to ensure that the data contained in this directory is correct at the time of going to press, we will not be held liable for any errors or omissions however they have arisen.

If any reader finds an error then please let us know, by writing to Format Publications at the usual address, so that we can make corrections in the next issue of the directory. Likewise, if you know of any company that you feel should have been in this directory but is not, then let us have details of the company's name and address and we will try and solicit an entry for the next issue of the directory. Sadly, in reply to the same request last year we only received a handful of letters - come on readers, there must be many more companies we are missing at the moment. Tell you what, as an incentive, we will put any letters we receive telling us about new companies (who subsequently appear in the next directory) into a hat and we will draw two winners who will each receive a ***FREE*** years subscription to ***FORMAT***. As well as Spectrum and SAM software/hardware companies, we also want to know about disc suppliers, printer ribbon sellers, repair companies - in fact anyone who sells anything that will be of interest to Spectrum and SAM owners.

It only remains for us to thank all those who took the time to fill in their entry forms and to express our hope that ***FORMAT*** readers will find this directory useful, informative - and above all worth keeping.

psuedocode. Psuedocode uses Do, While, If, etc. the same sort of control structures (constructs) used by programming languages but psuedocode avoids formal syntax. It helps the transition from a plain English description to program code.

```
Initialize      (i.e. things that only need to
be setup once)
Do
  Setup for start of game
  while not finished Play game
  show result
loop while quit not requested
```

All rather simple and doesn't help much with the actual gameplay but it does help to keep a good structure. The chances are if you dive straight into programming you'll end up with a very jumbled and badly organized program.

Now we need to put a bit of thought into how the game will work. Something like the following will do to get us started.

```
Do
 Wait for request
  if Quit  - exit game
  if cursor keys - move cursor
  if check - and if not already checked:
     if mine - flag as finished
       calculate number of surrounding
              mines
       set status to checked
  if mark mine - toggle mine marker
    if all cleared and mines marked -
       finished
loop while not finished
```

Right that's enough planning for the moment, now it's time to load up SAM C, select EDIT and start to do some coding. A C program normally consists of the following parts:-

```
preprocessor instructions
main()
function Definitions
```

Preprocessor Instructions

I'm sure you already know that we should start our C program with `#include "stdio  .h"`. We will also need to use some library functions such as paper, pen, border, cls, etc. so we must declare the libraries to be included, (by specifying the header file, e.g. graphics.h) and the functions to be used from each library. The equivalent source code library files (e.g. graphics.c) should be included at the end of the source code listing. With a bit of hindsight I can add a few more functions and say that the start of our source will look like this:-

```
#include "stdio   .h"
#include "graphics.h"

extern void box (int x, int y, i
nt w, int h);
extern void cls (int a);
extern void mode (int a);
extern void pen (int i);
extern void paper (int p);
extern void border (int b);

#include "conio   .h"

extern void window (int a, int b
, int c, int d);

#include "stdlib   .h"

extern int abs (int x);
extern int rand ();
extern void beep (int d, int p);

// My function prototypes

//Symbolic constants

// External variables

// main ()

// Function definitions

#include "graphics.c"
#include "conio   .c"
#include "stdlib  .c"

// end of file
```

The statements following // in the above listing are included to show the layout of the source code text and will be explained later.

Function Prototypes

The format for the external function prototype is:-

```
extern type function_name ( pa
rameter list );
```

The extern tells the compiler that the function is from an external library file. The type indicates the type of the data returned by the function e.g. it can be int, char, etc. If the type is void then no useful data is returned. The parameter list shows the parameters (type and name) passed to the function. For the prototype it is the parameter type that is important not the parameter name.

After the external functions it is good practice to declare the prototypes of any functions we write for the program. The format will be the same as for the external library functions except extern is not required. As each new function is written a prototype should be included at this part of the listing. I usually keep the function prototype declarations in the same order as the function definitions in the source code text, so that they act as a coarse index.

Symbolic Constants

Symbolic constants use a name to represent a value in much the same way as a variable. The difference being that a constant remains the same while the program is running where as a variable can be changed. By convention upper case is used for constants and lower case for variables. The advantage of using constants is that as the constant name is used throughout the code rather than a value, only the constant definition needs to be changed and the compiler will insert the new value at every occurance in the code at compile time. This saves searching through text trying to find where changes are needed with the risk of missing one or incorrectly altering another value.

So that the background colour for the game window can be changed to suit personal preference, but only before the code is compiled, we will use a symbolic constant as follows:-

```
#define BACKGROUND 5  // backgr
ound colour for game window will
 be cyan
```

And that is all I have room for this month. Next time we will look at declaring External Variables, Function Definitions and make some headway with some real coding towards out game.

Back soon.

FORMAT

SAM REPAIR SERVICE

We are pleased to be able to offer readers an official, West Coast approved, repair service for SAM Coupé and SAM élite computers and add-ons.

PRICING Because every fault is different we can't guarantee a fixed rate. When we receive your machine it will be tested and, if it is going to cost more than £35 for the repair then we will contact you for authority to continue.

Pack your machine well (we will use your packing for its return). Please phone us on 01452-412572 for advice on dispatch (we can even arrange UK Mainland collection and overnight delivery for an extra £12.95). In many cases we can also give an estimate over the phone. All repairs returned by overnight carrier so tell us which days there will be someone in to sign for the parcel. Please quote your INDUG membership number and give a evening contact phone number.

Send your machine to:-

Format (SAM Repairs),
34, Bourton Rd, Gloucester, GL4 0LE.

IT'S SHOWTIME

Once again it is time for the Autumn show again and Saturday October 25th will see our 9th Gloucester Spectrum & Sam Show at our usual venue at Quedgely Village Hall, Bristol Road (B4008) Gloucester - close to Junction 12 on the M5. (See the directions printed on page 17 for more details).

The show opens to the public at 10:30am as usual, and runs until 4:30pm. Entry is just £2 per person, with up to two under 14s free if accompanied by an adult - we like to look on this as being a family show so we do what we can to encourage the younger visitors.

Make sure you bring lots of money with you or at least your cheque book (we can always provide the pen).

BRING AND BUY

The Bring and Buy stand is famous with Gloucester Show regulars. It is usually one of the most crowded stands during the day, giving you the opportunity both to rid yourself of those surplus items you have gathered over the years and of course to find that one item you have always been looking for.

If you are selling items then please remember to make sure everything is fully working, complete, and has its instructions or manual. If possible put a small label on each item giving your name and the price you are asking. The Bring and Buy table, in the back room, is not constantly manned, although Derek Morgan does try to keep an eye on things for us if he is not too busy with his SAM PD stand. However, we leave it up to buyer and seller to get together and do the business. Each show sees many hundreds of items change hands and I'm sure there will be even more this time, but you will understand that we as organizers cannot be responsible for items left for sale, nor can we be responsible for items you purchase. Our recommendation to buyers is to make sure you get the seller's address, just in case.

STAND BOOKINGS

If anyone wants a stand at this show (or for a future show), and has not already had a booking form from us, then ring Jenny on 01452-412572 right away.

HOTELS

If you want to make a weekend of your visit to Gloucester then ring the Tourist Information Centre on 01452 421188 or write to them at St. Michael's Tower, The Cross, Gloucester, GL1 1PD. They will send you a list of local hotels in your price range.

FOOD & DRINK

The most important service at any show. There will be plenty of refreshments and snacks available inside the show, at very cheap prices I will add - not the rip-off prices you find at many shows.

There is also a good pub right next door that sells midday meals and there are plenty of other pubs in the area. Gloucester's main Tesco is also just over the road.

SEE YOU AT THE SHOW

WHO'S THERE

The question everyone asks when they hear about a show is "Who will be there?". Well, I think it is safe to say that nearly all the companies that count in the SAM and Spectrum world will be there and I am sorry there is not room to mention everyone in this write-up.

FORMAT. Yes, we will be in our usual spot, one advantage of organizing our own shows, with all our range and those of REVELATION, WEST COAST, BETASOFT and a limited selection of the EMIGMA range.

SAM PD. I've already mentioned that Derek Morgan will be in his usual place in the back room. As well as the PD software there is also a growing range of commercial software under the F9 label. SAM PD now have some new Comms software for SAM to allow access to bulletin boards of linking two SAM users via telephone lines.

DEMOS & HELP. Carol Brooksbank will be there as usual ready to give help and advice to any who feel a need for it. Anyone wishing to demonstrate something to other people will be very welcome - we will try to get you some time on a machine at the show - if at all possible.

QUAZAR. Colin Piggot will be on hand to fill the hall with incredible sound - if you have never heard the Quazar Surround system in all its glory then make sure you get to the show. Quazar will also be showing several new software releases including *Stratosphere* their new 3D wire-frame, mode 4, cyberspace battle game.

SAM SUPPLEMENT. Will be showing off their disczine as usual together with growing range of SAM software.

S.D.SOFTWARE. Got your SAM Hard Drive yet? Well if you are behind the times, then this is the ideal opportunity to take that 'giant leap for SAMkind' and attach a hard disc to your machine. From 20Mb to many giga-bytes, all IDE drives work to give you the sort of storeage you thought you could only dream about.

FRED SOFTWARE and SATURN SOFTWARE . Fred's wide range of SAM software and of course the famous FRED disczine. This will be the second show under the management of Darren Wileman (who of course will also be showing his own range of software under the Saturn label). The show also sees the first public outing for Fred's new game - *COLONY*.

Colin McDonald and Colin Anderton should be there as well.

There will be other stands of course, it is simply that we have to go to press far too early to get a full list in and there just is not enough space anyway. What you can be assured of is bargains galore and lots of interesting people to talk too.

Make sure you get there on Saturday the 25th *OR YOU WILL REALLY BE MISSING OUT.*

GETTING THERE

Gloucester is very easy to reach from most parts of the country either by road, rail or coach.

By Car: If you are travelling north on the M5 then come off at junction 12 and follow signs for Gloucester. A few hundred yards from the motorway slip-road you will come to a roundabout with a service station on your left, take the second exit and follow the A38 towards Gloucester for a short distance. Now take the turning on the left, marked B4008 with signs for Quedgeley and the Severn Vale Shopping Centre. Go straight over at the first roundabout and then just before the next roundabout the hall is on the left, set back a bit from the road and often slightly hidden by the mobile fruit & veg stall that uses the forecourt.

For those coming south there are two choices. Junction 12 is not available southbound, so it is easier to continue to exit 13 and then turn north onto the A38 - this only adds about 5 miles to the journey and avoids the traffic around Gloucester. The alternative is to exit at junction 11 (the A40/Cheltenham exit) and follow signs for Gloucester, follow the ring-road around - you eventually get signs for M5 South - until you reach a large traffic light controlled junction (used to be the roundabout if you've been before). This has the local BT offices on the left, go straight across, following signs for Severn Vale Shopping Centre (see above for more details).

Anyone not using the motorway should be able to work things out from their own road atlas, Quedgeley is to the south of the city.

Warning, anyone with new maps may be tempted to use junction 11a, don't, it is a nightmare and even locals don't know where it goes to.

Parking: Please use the free parking provided, just round the corner, in front of the Tesco Super-store. Remember to lock any valuables safely away out of sight - being a busy car-park your car should be quite safe, but it is better not to take chances by putting temptation in front of thieves.

By Rail or Coach: Gloucester is well served by Rail and Coach services. Buses to Quedgeley run about every 15 minutes from the Bus/Coach station (which is almost opposite the entrance to the Train station) ask at the travel office. On the bus ask the driver for Tesco Superstore - he will know where you need to get off, the journey takes around 12 minutes.

Other Attractions: There are plenty of shops in the city centre. There is also the National Waterways Museum at Gloucester Docks, our famous Cathedral and lots of other historic and interesting places to visit.

Cheltenham, with all its fine Georgian buildings is only a few miles away. There are many picturesque Cotswold villages and beautiful scenery within just a few miles of the hall. Just down the A38 there is the Slimbridge Wild Fowl Sanctuary, a place everyone should visit, so why not bring the whole family.

SAM élite 512

The advanced computer that retains a user friendly appeal which makes even the beginner feel right at home. An easy to learn Basic and disc operating system (no messing with slow tapes here) will allow you to do things you never thought possible before. Your SAM comes with a very easy to read manual and everything you need to get started - it even has some pretty impressive demo software for you to run, just to give you a few ideas for starters.
If you already own a Spectrum then this is the machine for you because you don't have to throw away all you have learnt so far - just be prepared to be amazed at the extra power and features.

POWER AT A PRICE YOU *CAN* AFFORD...

FEATURES INCLUDE

512K RAM
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Plus *LOTS* More....

ONLY £199.95

Includes 1 year return to base warranty on full computer PLUS extended 2nd year warranty on main board.

Reconditioned SAM Coupé

We are able to supply a small number of professionally reconditioned SAM Coupé computers. These have been fitted with a modern style disc drive, a version 3 ROM, new keyboard unit, and are supplied with new manuals and DOS system disc. They carry a full 90 day full return to base warranty. Because these are reconditioned machines there may be slight blemishes to case or base.

Has All The Features Of The SAM Elite, Except That There Is No Built-in Printer Port On The Coupé (see the SPI, under interfaces below)

ONLY £139.95

SAM Coupé Replacement Disc Drives

The original slot-in slim-line drives produced for the SAM Coupé are no longer made. If your existing drive is now showing signs of terminal decline perhaps it is time you gave your SAM a new lease of life by fitting a modern style (PC type) floppy drive.

In most cases we find the faults with old drives are mechanical (due to worn heads, stepper motor failure, etc.) In these cases you need an Internal Interface Type 1 to which you transfer the 1772 disc controller chip from your old drive - thus making the upgrade as cheap as possible..

If you want to fit a second drive (or first drive, if you don't have one or the 1772 on your old drive is faulty) then order a Type 2.

Both types are available in either kit form or ready assembled. For the kit you will need screwdriver, soldering iron, solder and a reasonable level of soldering skills. All you need for the assembled version is a screwdriver. Full fitting instructions are given and the only other thing you need is a standard PC type disc drive from your local supplier (cost about £20 to £25).

If you have any doubts about which type of interface you need, or any questions about the drive fitting in general, then please give the FORMAT hotline a ring on 01452-412572 and they will be pleased to help you.

	Kit Form	Assembled
Internal Disc Interface Type 1 (without 1772)	£19.95	£29.95
Internal Disc Interface Type 2 (including 1772)	£29.95	£39.95

INTERFACES

These interfaces work with both the SAM élite and the SAM Coupé unless otherwise stated.

SAM MOUSE SYSTEM Interface, High Quality Mouse and the Software to drive it. The interface plugs into the mouse port on the back of SAM so you don't need a spare expansion socket. More and more software now works better if you use a mouse. ***Only £39.95***

SAM PRINTER INTERFACE The SPI (Coupé only) allows connection to any standard parallel printer. Allows standard LPRINT, LLIST & DUMP commands to work on compatible printers. Plugs straight into the expansion port. Requires BBC type 26 way ribbon printer cable (see below). ***Only £24.95***

TWOUP Allows two interfaces to be connected to SAM's expansion port at same time. ***Only £19.95***

XDI The eXternal Disc Interface. Allows external 3½" or 5¼" drive to be connected to SAM Coupé. Also includes Parallel Printer Interface. ***Only £44.95***

ALSO AVAILABLE: Printer Cable - £7.95, SCART Cable - £7.95, Replacement Keyboard £14.95, Replacement Power Supply - please ring. Plus spare parts service - tell us what you want and we will give you a price..

Ordering: Write your order clearly , state your name; full address and phone number and if possible please quote your INDUG number as this will help to speed orders. Payment: Cheques and UK Postal Orders should be made payable to FORMAT PUBLICATIONS. Overseas customers may also pay using FORMAT's foreign exchange scheme. Postage & Packing: Prices include UK p&p. Overseas customers please write for a quote. Prices valid until 1st January 1997. E.& O.E.

Send Your Orders To:-

West Coast Mail Order,
c/o Format Publications,
34, Bourton Road,
Gloucester,
GL4 0LE.

West Coast Computers

YOUR LETTERS

Dear Editor,

The problem encountered by Mr Peter Williamson (July ***FORMAT***) struck a bit of a chord.

I have an 'original' SAM with ROM upgrade, MasterDOS/Basic etc., and about three years ago I fitted a second slim-line drive to the right slot. The situation may not be the same as Peter's, but I did find a similar problem which still exists; that is, SAM does not recognize Device D2 the first time it is entered.

My way round it is, after the first Device D2 I ask for DIR2. SAM immediately responds and drive 2 whirs merrily away. All subsequent commands for D2 during the same session are followed, including Drive changes for copying, back-up etc. It only needs a kick-start after power-down or reset.

This may not solve Peter's glitch, but it is a quirk worth trying. By the way, don't ask me how or why it works - it just does!

Yours sincerely, Roy Gardner.

Could be the same but it is difficult to tell. What error report do you get? If it is 'Check Disc In Drive' then that is possibly a sign that the drive belt on your drive is a bit past its prime. However, if the error is 'No Such Drive' then it is the 'MasterDOS not detecting it' problem. ***Ed.***

Dear Editor,

I am seeking the whereabouts of 'early period' SAM Coupé software. Software which is no longer being listed in SAM club software libraries.

Please could you or someone create a nice library, historical facsimile of SAM Coupé software/hardware, and where to obtain said items (if still available).

Thanks for mentioning my name in your recent publication of ***FORMAT.***

Yours sincerely, Charles Roads.

Most of the earlier SAM software is still available although some of it is not advertised these days. Come along to one of the Gloucester shows, that is where you will find the biggest selection.

As to a software library - sorry, but unless the program has been placed into the public domain it would be illegal for someone to rent it out without the permission of the software company - something they would not get. ***Ed.***

Dear Editor,

August copy received only today, and blank pages at 13 & 20, what's gone wrong? Hope you get these sorted out and we get an early copy this month, plus of course the missing pages!

I am inclined to agree with member J.Woodhead, a reprint of some of the earlier times, especially the out of print editions of ***FORMAT***, I'm sure would not be amiss and of great interest to us 'Speccy' owners. There must still be quite a good few of us out here still, and any articles on the PLUS D etc., would be of great interest to me and maybe others as well.

Yours sincerely, Deryck R.J.Morris.

With any printing process you are bound to get some blank pages creep in once in a while. More often than not is is two sheets sticking together as they go

through the print machine. Not a real problem to worry about, and Jenny has sent you another copy already.

I've spoken to lots of people about the reprint idea and the balance of opinion, which I must admit I agree with, is that it would be unfair on those who have already purchased a complete set of issues. However, there are some things that could do with being re-written and updated. It is a bit of a mixture really. There are some highly technical articles in the earlier issues which could do with retelling in a slightly more 'user-friendly' fashion. There are also articles which need updating with the benefit of hindsight, in other words to take notice of articles that appeared in later years.

All we really need are a few writers/ programmers prepared to have a go. If anyone is interested please get in touch with me. ***Ed.***

Dear Editor,

Every time when ***FORMAT*** arrives I use to greet them as an old friend and I am very curious what kind of new detail, property, tips and tricks I shall find in the new issue. And, I am never disappointed, every month I find some new, or some new possibility or a new side of my favourite Spectrum.

It was the same when I received the August 1997 issue. Just looking on the cover side I greeted the new (mirrored) side of the young lady as an old friend.... did she not discover ***FORMAT*** already in 1993 February?

Yours sincerely, Istvan Ordog.

Yes *<grin>*. You caught me out Istvan. Now don't go telling the other readers but I was in a bit of a rush and could not get a fresh cover from Jon Nixon in time, so I scanned and altered the image - and there was me thinking "no one will notice". ***Ed.***

Dear Editor,

Please find enclosed cheque as payment for another twelve issues of your marvellous magazine. I've thoroughly enjoyed every issue received right from when I joined INDUG.

My apologies for not sending in the renewal form, but at present I just cannot find it.

With regard to articles most and least enjoyed, that's impossible, they are all brilliant.

A subject I would like to see covered would be *PC Suite* as I don't remember it ever being reviewed in detail and as I now own a PC as well as a SAM Coupé it would be useful to know what can and can't be done.

Yours sincerely, Peter D.Edwards.

Thanks for your kind words, glad you enjoy ***FORMAT*** so much, and with kind comments like that how can we possibly complain because you lost your form.

As I have said so many times before, *PC Suite* is invaluable in preparing ***FORMAT*** each month. I use it to transfer many of the articles and most of the programs from SAM to the PC. Even Spectrum programs follow the same route after being converted to SAM first.

I would be surprised if we did not review it back when it first came out around 1992 - but I must admit I have not had time to search for it yet. ***Ed.***

Dear Editor,

I thought I would drop you a line to praise Alan Skillman's extraordinary SAM Coupé emulator program called *Sim Coupé* for the PC and UNIX computers. I was surfing the internet at work a few months ago and came across the *Sim Coupé* for Unix/Linux systems.

So I went out and purchased a giant book on linux (a UNIX clone for PCs) and tried my best to set this operating system up just so I could use *Sim Coupé* on my machine. But I had a lot of problems and left it to a time that my computer knowledge was capable of setting this kind of system up.

I decided to have another look last week to see how *Sim Coupé* was getting along, and found a DOS version of *Sim Coupé*. So I down loaded *Sim Coupé* v0.7 'alpha' and transferred some of my SAM software across using *Samdisk* and I was well impressed.

I haven't really used my SAM Coupé over the last year, because of my PC although I have still followed SAMs progress through ***FORMAT***, but I was going to end my subscription to Z80 ***FORMAT*** and just stick with PC FORMAT, but now I will definitely renew my subs to both.

If there are any SAM users out there that own PCs, and thinking of dropping out of the SAM scene, I seriously advise them to get a copy of *Sim Coupé*, because it really has renewed my interest in SAM. I think it's a shame that those like myself that don't have access to the internet on a regular basis, lose out on such an excellent program. There is no other way of contacting the author other than e-mail to praise his efforts and tell him about the software which I have got to work.

I don't know if there is any kind of mail order service to be able to get hold of the *Sim Coupé* for those not on the internet, if there isn't I would be happy to set one up.

Anyway I don't think the *Sim Coupé* for DOS should go unnoticed, and I hope Alan Skillman and Co keep up the good work.

Yours sincerely, Colin Brown.

We have of course known about *Sim Coupé* for some time - it has been demonstrated at a couple of the Gloucester shows although not as a full public demo.

The UNIX version is now very stable but the DOS version is still at the alpha-testing stage so there is still a lot of work to do on it. Alan Skillman has done a wonderful job so far but it will be a while before he has a fully working version for DOS. We will review *Sim Coupé* as soon as Alan thinks it is ready. ***Ed.***

Dear Editor,

Just received the September ***FORMAT*** and I must say "well done" to you and your team. I've only been a reader for two years and kept putting off purchasing the back issues as I'm a student and do not have much spare money.

However, now I've seen your year by year review of past volumes I think completing the set (at least covering the SAM years) is something I really must do before more issues go out of print.

Happy 10th Birthday ***FORMAT***, and many more to come I hope.

Your sincerely, S.R.Fowler.

Glad you liked it, it was well worth the extra effort needed to do the special issue. I'm sure if you get started now you will soon build up your back-issue collection. ***Ed.***

Dear Editor,

Is it really ten years? Can it really be that long ago I got my first DISCiPLE?

It was not until Volume 11 Nº1 landed on my doormat last week that I realised how long you had been going. And to think I've been receiving ***FORMAT*** since issue 2. I purchased issue 1 from you at a London ZX Microfair and paid my subscription so issue 2 was the first to be sent to me. I just can't believe it has been so long.

While my Spectrum is now consigned to the loft (I would never part with it) and my SAM is showing signs of needing its second replacement keyboard (how much are they now by the way?) I still feel that I learn something from each issue of ***FORMAT***. Your special birthday issue was a wonderful trip down memory lane and it showed me how important ***FORMAT*** has been to me and to others over the years.

Please keep up the good work.

Your sincerely, Colin Wilton.

OH shucks! You're making me blush Colin, too much praise....

Thanks anyway. It's been a good ten years, but there are many more to come and you ain't seen the best yet.

Replacement SAM keyboards are available at £12.95 (including UK postage and packing) just send an order in to Jenny and she will get one off to you. ***Ed.***

Dear Editor,

I really must complain about the latest issue of ***FORMAT*** (11/1). I know it was your birthday issue and all that but did you really have to waste so much space on your reminiscences?

Surely you could have covered the fact that it was your birthday issue in the editorial and left it at that - as it was there was not a single new article in the issue so there was nothing to interest me at all which I do not think is fair to your subscribers.

What we want is articles on hardware and software. Things that we can get our teeth into. So please make sure that you do not produce anymore 'special' issues like this or I will not be renewing.

Yours sincerely, Martin Heathfield.

Sorry to have upset you Martin, hope you will not hold it against us.

From the letters and telephone calls we have received since the special 10th birthday issue went out I've got to say that you are in a minority of one at the moment. Most people seem to have been very pleased with the special issue and we have even had some of our PC subscribers ordering copies to see what we have been up to all these years.

Still, it proves that you cannot please everyone all of the time.

Anyway, the next big birthday issue is now nearly ten years in the future so I hope we can pack enough into the forthcoming volumes that you will stay to see our 20th Birthday issue.

Thank you for taking the time to write. Even though it was criticism it was still nice to hear from you. ***Ed.***

Letters may be shortened or edited to fit on these pages although we try to edit as little as possible.

This is YOUR letters page so it is up to you to fill it with interesting things. Come on, get writing, any subject even remotely related to computers. Just keep things as short as you can so we can fit in as many as possible each month. Please write clearly or type your letters. Send them to the address on page 3 or email them to us at Formatpub@aol.com.

SMALL ADS

FOR SALE Grey cased Spectrum +2, with PSU, leads and manual. Good condition, + one for spares. £25. Contact Denis Seccombe on (01670) 824788.

FOR SALE SAM Coupé hardware and software. Send for list. M.Hildred, 177, Bideford Green, Linslade, Leighton Buzzard, Bedfordshire, LU7 7TS.

WANTED Two cassette recorders. Can be tatty as long as they are working as they will be out of sight. Mr A.J.Harding, 25, Churchdown Lane, Hucclecote, Gloucester, GL3 3QH. 01452-2618243.

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Please note: Adverts now run in both ***FORMAT*** and **FORMAT PC** to give you twice the market.

9/25

SOFTWARE

SAM Coupé Software On 3½" Disc

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MasterDOS The advanced Disc Operating System for SAM. Includes random access files, sub-directories and lots more.

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Order Both MasterDOS & BASIC Together and SAVE £5.

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SPECTRUM SOFTWARE

Unless otherwise indicated these are DISCIPLE/PLUS D programs. Please state 3½" or 5¼" disc (80 track only) on order.

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Price: £14.00 per volume.

All issues, from Volume 8 N° 1 (September 1994) to the latest issue, are available separately. To order just quote the Volume and Issue N°.

Price: £1.75 each, (5 or more £1.50 per copy).

HARDWARE

DUC LEAD For use with DISCIPLE or PLUS D. This 'Dualing Up Cable' allows two disc drives to be attached without the need for opening one drive to alter its ID. Allows you to switch drives to even out wear without opening cases. RRP £16.95

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Order Code: PPL-01 **Price:** £7.95

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SAM COUPÉ TECHNICAL MANUAL Version 3. The real inside info on SAM. No SAM is complete without one. RRP £16.95

Order Code: STM-01 **Price:** £12.95

NEW SAM_CLOCK NEW

The SAM_CLOCK is fully compatible with the TIME and DATE functions of MasterDOS and has an integral battery that keeps the board functioning when your SAM is switched off. The board fits onto the expansion connector at the back of SAM but comes with a built-in through-connector so you don't need a Two-Up to use it in conjunction with another interface. R.R.P. £29.95

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